

# CE 505-005 – 3D laser scanning

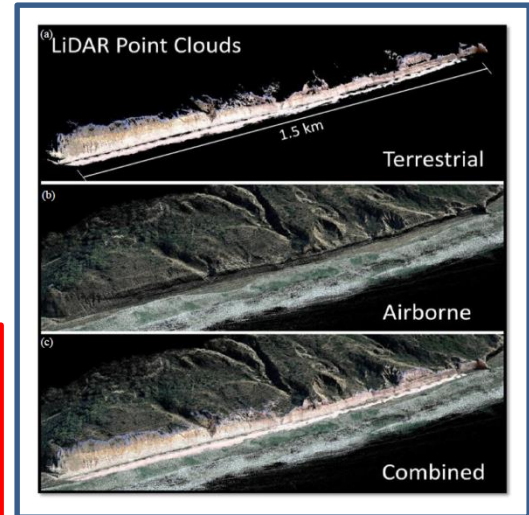
3 Units, Fall Quarter 2013, Tuesday Thursday 13:00-15:50pm lecture/lab combo

Fundamental principles of 3D laser scanning and LiDAR, including sensor types (ground-based, mobile, airborne), acquisition, processing, visualization, and analysis. Establishing control for laser scan surveys. Discussion on errors, limitations, and overall quality control of laser scan data. Generation of topographic and CAD models from laser scan data. Introduction to Building Information Management (BIM). Applicable to many disciplines, such as:

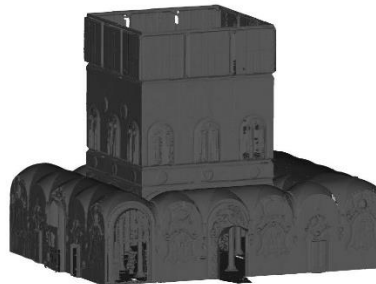
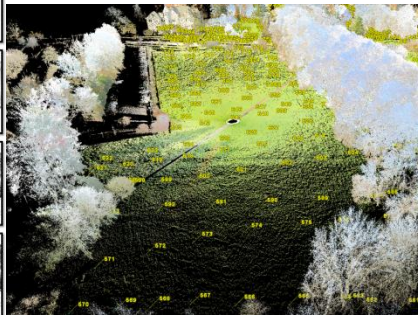
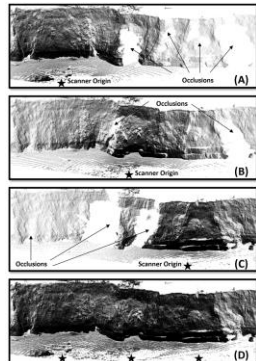
- Civil/Construction Eng.
- Geosciences/Geology
- Coastal Science
- GIScience
- Computer Science
- Forestry
- And many more!

Pre-reqs: Surveying course and/or GIS experience. Open to graduate students and seniors. Open to all majors. Counts as a GIScience Elective!

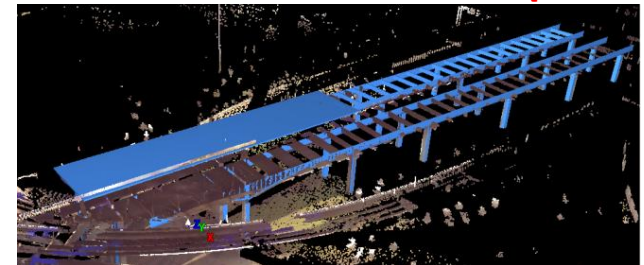
## Laser scan data acquisition



## Processing and modeling



## Scan to CAD\BIM

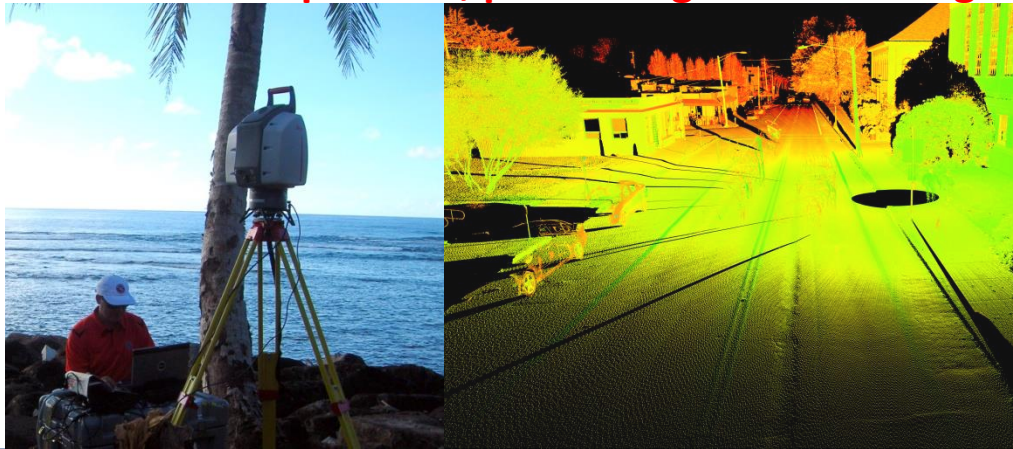


Questions? Please contact [michael.olsen@oregonstate.edu](mailto:michael.olsen@oregonstate.edu)

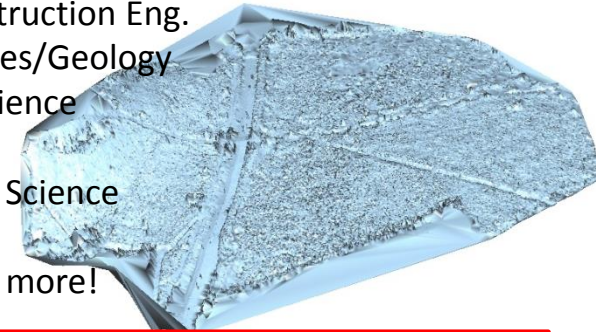
# CE 562 - Digital Terrain Modeling

4 Units, Winter Quarter 2014, MW 10-10:50am lecture Friday. 10-13:50am lab  
Understanding and development of algorithms and workflows used to model terrain from data acquired using remote sensing techniques. The course will focus on optimizing triangulations (Delaunay, etc.) and grids (i.e. Spline, IDW, etc) using high resolution data (such as LiDAR). Development of computer code to enhance data processing. Discussion on errors and quality control for DTMs. Calculations using DTMs. GIS Spatial analysis. Applicable to many disciplines, such as:

## LiDAR data acquisition, processing and modeling

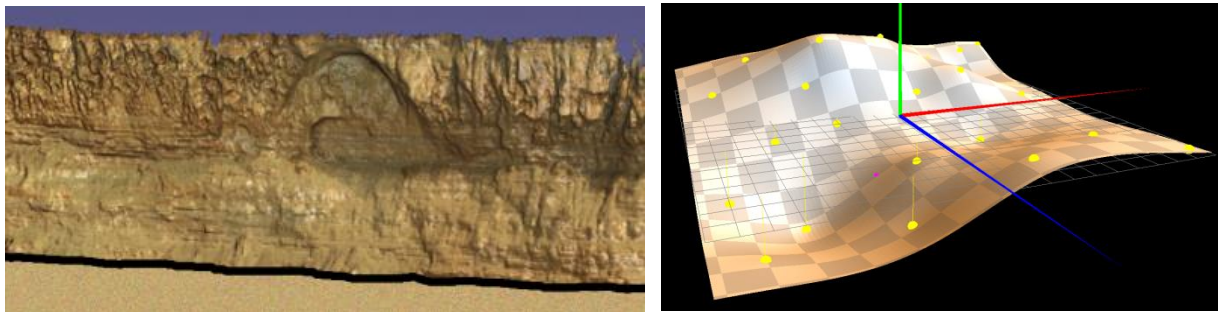


- Civil/Construction Eng.
- Geosciences/Geology
- Coastal Science
- GIScience
- Computer Science
- Forestry
- And many more!

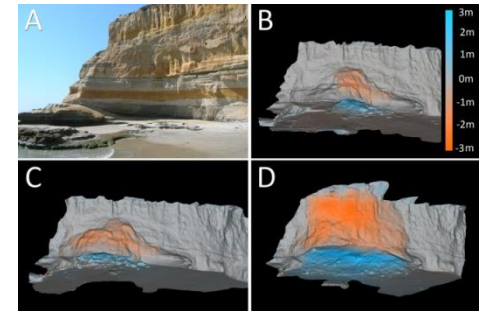


Pre-reqs: Surveying course and/or GIS experience. Some programming experience. Open to graduate students and seniors. Open to all majors. Counts as a GIScience Elective!

## High resolution triangulations, grids and texture mapping



## DTM change analysis



Questions? Please contact [michael.olsen@oregonstate.edu](mailto:michael.olsen@oregonstate.edu)